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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/446,623	03/21/2000	KLAUS-LEO WILBUER	SWR-0004	2649
23413	7590	05/18/2004	EXAMINER	
CANTOR COLBURN, LLP			CHAMBERS, TROY	
55 GRIFFIN ROAD SOUTH			ART UNIT	
BLOOMFIELD, CT 06002			PAPER NUMBER	

3641

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/446,623	WILBUER ET AL.	
	Examiner	Art Unit	
	Troy Chambers	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. In view of the appeal brief filed on 22 January 2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-10, 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, applicant's claims make reference to a dispersion bath. A

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dispersion is the act or process of dispersing; the state of being dispersed. Disperse means a) to cause to break up, and b) to cause to become spread widely. Applicant's arguments make it clear that the "relative movement" does not create the dispersion but is a separate and distinct step. However, the applicant's specification fails to define "dispersion bath" and fails to disclose how it is created in the first place.

5. Claims 1-10, 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claims 1 and 13 recite the limitation, "at least intermittently" when describing the time period for the relative movement between the surface to be coated and the dispersion bath. However, the specification as filed does not provide support for this limitation. Webster's defines intermittent as "not continuous". The phrase "at least intermittently" not only includes a relative movement that is not continuous but one that is continuous as well. Applicant's specification, as originally filed did not provide support for a continuous mixing process.

6. Claims 1-10, 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, claims 1 and 13 recite the limitation, "at least intermittently" when describing the time period for the relative movement between the surface to be

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coated and the dispersion bath. The phrase "at least intermittently" not only includes a relative movement that is not continuous but one that is continuous as well. However, the specification does not disclose to one of ordinary skill the art a relative movement that is. The following references to the specification are the only locations which give an indication as to the frequency of the relative movement:

- Pg. 2, 2nd paragraph, " and during the coating process a relative movement is produced between the surface to be coated and the dispersion bath, *at least for a time.*" (emphasis added). "At least for a time" is undefined since time can be infinitesimal or infinite.
- Pg. 4, last paragraph, "The plates were all turned every half hour in the bath and *moved up and down from time to time* in order to produce a relative movement between the surface and the dispersion bath..." (emphasis added).

These references suggest a relative movement that is, at best, performed occasionally and not on a continuously.

7. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, applicant has amended claim 1 to include the phrase "contacting process". It is not clear what applicant means by this phrase. For example, claim 13 was amended to recite "coating process" and in the appeal brief filed by the applicant, "contacting process" and "coating process" are used interchangeably (See, Appeal brief, pg. 9, lines 9 and 16). Are the contacting and coating processes the

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same? Applicant should provide a clear meaning for the term and support in the specification.

8. During a conference with senior Examiners, it was determined that the rejections under 35 U.S.C. 112(1) and (2) should be maintained.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 13 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Baburek. Baburek discloses a shielding element having a boron carbide content of 50 wt. % in the nickel matrix (pg. 9, ll. 1-5). If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Applicant argues that a cross-cut through the coating of Baburek would reveal a sandwich-type structure with layers having different compositions. However, the Derwent cover sheet provided by the applicant clearly discloses, “Box for underwater storage of irradiated nuclear fuel assemblies – is made of sheet metal with neutron absorbing coating of boron carbide particles *embedded* in nickel.” Also, pg. 9, lines 4-5 of Baburek discloses a 50% mass proportion of nickel to BC4.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over EPO Publication EP 55679 issued to Baburek in view of U.S. Patent No. 4238299 issued to Wang. Baburek discloses a boron-nickel shielding element. However, Baburek does not disclose the relative movement claimed by the applicant. Wang discloses a dispersion bath manufacturing process for nuclear radiation shields including a relative movement provided at least intermittently (col. 4, ll. 12-68 and col. 5, ll. 4-32). It would have been obvious to one having ordinary skill in the art to manufacture the boron-nickel shielding element of Baburek using the process disclosed by Wang. The suggestion/motivation for doing so would have been to achieve an even distribution of boron particles.

12. With respect to claim 1, Baburek discloses a shielding element as described above. Wang discloses a process comprising: providing a basic material forming a shielding element (col. 3, ll. 11-12); providing a dispersion bath whereby a dispersion of the dispersion bath comprises nickel and boron and/or compounds of boron (col. 3, ll. 15-22); contacting the shielding element at least partly with the dispersion in the dispersion bath thereby providing a coating wherein boron and/or compounds of boron

are embedded in a nickel matrix on the contacted surface of the shielding element (col. 3, ll. 19-22); and, providing at least intermittently a relative movement between the surface to be coated and the dispersion bath during the contacting process (see col. 3, ll. 42-50 in which Wang clearly discloses: "A preferred technique is to *add a little boron carbide at a time*, for example, by adding 10% of the total weight of boron carbide *stirring slowly for one minute* and then stopping stirring to allow the particles to settle for just over an hour, (e.g. 80 minutes) *between carbide additions*. The plating current may *remain on or off* for the brief interval coinciding with each subsequent addition of boron carbide particles and agitation of the electrolyte." Because the plating currents remain on during introduction of the boron particles, there will necessarily be a settling of some of the particles during the stirring process.

13. With respect to claim 2, see Wang, col. 4, ll. 48-59.

14. With respect to claim 3, see Wang, col. 4, ll. 12-17 and Figs. 1, 6 and 7.

15. With respect to claim 4, see Wang, col. 3, ll. 19-22 and col. 4, ll. 45-46.

16. With respect to claim 5, one having ordinary skill in the art would find it obvious to remove the carbon element from the boron carbon compound. Removing the carbon element would eliminate the abrasive properties of the boron carbon compound but would physically allow more boron to be embedded in another metal as a result of the increase in molecular spacing.

17. With respect to claim 6, Baburek discloses a method for coating a shielding element with a boron-nickel layer using a plasma torch (Abst.).

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18. With respect to claim 7, Wang discloses electrolytic boron carbide deposition (Abst.).

19. With respect to claim 8, the thickness of the coating is controlled by the quantity of coating material used and, therefore, involves only routine skill in the art. One of ordinary skill in the art using the process of Wang to manufacture the shielding of Baburek would find it obvious to provide a sufficient quantity of coating material to achieve the properties of a shielding element having the claimed thickness.

20. With respect to claims 9 and 10 Baburek discloses a boron carbide content of 50 wt. % (pg. 9, ll. 1-5).

21. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang and Baburek in view of Wang as applied to claims 1-10 above, and further in view of U.S. 3616279 issued to Kendall. Wang and Baburek are described above with the exception of the subject matter of claim 12, namely a process that takes place in a glass tub. Kendall discloses a titanium coating electrolytic process carried out in a glass container (col. 3, ll. 53-55). At the time of the invention, one of ordinary skill in the art would have found it obvious to provide Wang and Baburek with the glass container of Kendall. The suggestion/motivation for doing so would have been to allow an operator to observe the process.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited on form PTO-892 are cited as of interest to show similar shielding elements and processes therefor.

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23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Troy Chambers whose telephone number is (703) 308-5870. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone, can be reached at (703) 306-4198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177. The fax phone number for the organization where this application or proceeding is assigned is (703) 306-4195.



MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER